

October 25, 2019

# New Hampshire DOT Statewide Pedestrian & Bicycle Transportation Plan and Economic Impact Study

## Technical Memorandum #2

## Analysis of Current Policies & Programs



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# Analysis of Policies and Project Development Process

Technical Memorandum #2 provides an overview of NHDOT's Project Development Process, summarizes and analyzes current Department policies and provides recommendations for changes intended to improve conditions for pedestrian and bicycle facilities. This memorandum also summarizes current 4 "E's" (education, encouragement, enforcement, and evaluation) programs that help to promote active transportation in New Hampshire. Finally, the memorandum presents policy and program "best practices" from a handful of other state Departments of Transportation.

## 1.1 Current Project Development and Funding

The majority of projects on NHDOT roads are developed through the Ten Year Plan process. This process happens over a two-year period. Regional Planning Commissions (RPCs) review projects, evaluate them based on criteria, and develop a regional ranking. These ranked projects are submitted to NHDOT in the form of recommendations, which NHDOT then takes and integrates into a draft Ten Year Plan. After a series of public hearings, the Ten Year Plan is refined and subject to approval by the Governor and NH State Legislature. RPCs that include specific criteria associated with the state goals for nonmotorized transportation will ensure those goals are supported in the Ten Year Plan.

As the beginning steps involve a large number of projects championed locally, funding constraints are often a big consideration in terms of how many projects move forward. Funding

constraints can limit adding additional infrastructure to projects as they move through the process, so including pedestrian and bicycle infrastructure in projects early on is critical. Often including these aspects is at the discretion of the project team, including the RPC/MPO, NHDOT, or consultant, once a project is selected and moved into the planning process. Specific guidelines would ensure bicycle and pedestrian infrastructure is considered consistently throughout the state.

Another challenge with these projects is they can take a long time to move through the process from identification to selection to planning to construction. Over the course of that time, local preferences may change, but funding constraints generally make it challenging to add bicycle or pedestrian infrastructure late in the process even if the public sentiment changes. NHDOT could reserve funds to

"Therefore, all transportation projects should consider the safety and mobility needs of all existing and potential users of the system. The ideal time to do this is during the initial project scoping and conceptual design phase of any project."

*(FHWA's Statewide Pedestrian and Bicycle Planning Handbook, page 58)*

add to project discretionally as projects advance, but that runs the risk of coming at the expense of the total number of projects which could be pursued.

Other states, including Massachusetts<sup>1</sup>, have clearly outlined the importance of multimodal planning in their project development and design guides. By including nonmotorized user needs explicitly in these design standards, key stakeholders are clearly informed about the Department's values and expectations for all roadway users.

**A significant improvement to the Project Development Process (PDP) would be establishing checklists to ensure pedestrian and bicycle accommodations are considered in each project.** These checklists would standardize treatment across the department and provide documentation for the decisions that are made. Education on pedestrian and bicycle options, expectations for their inclusion, and the use of the inclusion checklists are critical to ensuring all members of NHDOT work together toward the same goals for nonmotorized users.

### 1.1.1 Public Input

NHDOT uses a Context Sensitive Solution approach, <https://www.nh.gov/dot/org/projectdevelopment/highwaydesign/contextsensitivesolutions/index.htm> to encourage public input and collaboration with stakeholders during the PDP. This process is an excellent way to ensure local voices are included in the planning. Continuing to expand outreach methods to include a broad cross-section of the public, is critical to maintaining a process that considers public input. Leveraging the state's Complete Streets Advisory Committee (CSAC), RPC liaisons, municipal contacts, and statewide and local bicycle and pedestrian advocacy groups helps to ensure that a broad cross-section of the public is alerted to potential projects in their communities.

### 1.1.2 Funding Sources

Aside from Ten Year Plan funds, projects involving bicycle and pedestrian infrastructure (aka complete streets) can look to three other primary sources of funding: Congestion Mitigation and Air Quality (CMAQ), Highway Safety Improvement Program (HSIP), and Transportation Alternatives Program (TAP). These funds have various constraints.

**CMAQ funds** are intended to support projects that improve air quality or reduce vehicle emissions. The program allows a range of projects; one category is specifically dedicated to bicycle or pedestrian which would be used for transportation and would reduce single-occupant vehicle travel. The CMAQ program will fund projects up to \$1.5 million; larger projects can combine other funding sources. The project requires at least a 20% match, and projects have a higher chance of selection if they have higher air quality benefits.

**HSIP funds** can only be used in areas with significant safety concerns. A municipality must apply, often with the support of their RPC/MPO, to have a particular concern studied through the HSIP program via a Road Safety Audit (RSA). To qualify, the specific area of concern generally must have had a serious or fatal crash in the last 10 years. Improvements are identified within the RSA effort, then HSIP funds can

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<sup>1</sup> <https://www.mass.gov/files/documents/2018/08/08/pddg.pdfv>

be used for a wide range of proven alternatives. In addition, HSIP funds can often be accessed more quickly than other funding mechanisms. Roughly four RSAs are conducted each year.

The **TAP program** is dedicated to providing funding for projects that support non-motorized users, and it is highly competitive. In 2018, 38 applications were submitted in New Hampshire, but only 9 were selected. These projects ranged in size from \$300,000 to \$800,000. TAP program projects require a 20% local match.

An important step in supporting accommodations for pedestrians and bicyclists is tracking annual expenditures on walking and bicycling projects and elements of larger projects. **In addition to the expenditures related to the three programs described above, allowing pedestrian and bicycle infrastructure to be eligible for ALL roadway funding sources--other than money targeted to limited-access highway projects--is a policy that should be considered by NHDOT.**

### 1.1.3 Urban Compact Road Segments

Some roads are state-numbered highways but sit within an Urban Compact. Urban Compact areas are maintained and managed by the local municipality, and changes to those facilities would generally be driven through a local process and subject to local design regulations. Changes to state-numbered highways in an Urban Compact can be funded through local funds or through a state or federal funding program. The Local Public Agency (LPA) process is one mechanism for funding these projects that provides substantial financial support to communities and includes review by NHDOT. Unfortunately, projects with Complete Streets elements can move through the LPA process too slowly and funds are subsequently reallocated. **A review of the overall LPA process as compared to best practices from other states may identify opportunities to streamline it and is therefore recommended.**

Changes within an Urban Compact can happen quickly as they are subject to less regulation. However, the funding source for a project will affect the requirements of a project, its design, and its public input. Urban Compact areas are ones most likely to support more-frequent walking and short-trip bicycling, as they are within more densely-developed areas of communities and frequently closer to multiple destinations. Because these areas are subject to local control, incorporation of walking and bicycling accommodations in projects in these areas can vary widely.

## 1.2 Specific Policies

A number of specific policies related to the design and management of the roadway system have the potential to significantly impact pedestrian and bicyclist safety and comfort. Historically, these policies were often originally developed around the needs for motor vehicles, and adjustments to the policies may be appropriate to ensure they account for the needs of nonmotorized users as well. The following policy areas are reviewed in this section:

- Setting of Speed Limits
- Changes to speed limits
- Reallocation of roadway space
- Pedestrian crossing locations

- Sidewalk construction
- Data to Plan for the needs of Nonmotorized Users

### 1.2.1 Setting speed limits

A significant factor in the magnitude of collisions on vulnerable users is the speed motor vehicles are traveling during the crash. Speed limits and roadway context are important factors in ensuring a safe environment for bicyclists and pedestrians.

New Hampshire law requires all motor vehicles drivers to drive at a safe speed, and the state also has predetermined speed limits including:

**“RSA 265:60 Basic Rule and Maximum Limits. —**

(a) In a posted school zone, at a speed of 10 miles per hour below the usual posted limit from 45 minutes prior to each school opening until each school opening and from each school closing until 45 minutes after each school closing.

(b) 30 miles per hour in any business or urban residence district as defined in RSA 259:118;

(c) 35 miles per hour in any rural residence district as defined in RSA 259:93, and on any class V highway outside the compact part of any city or town as defined in RSA 229:5, IV;

(d) 55 miles per hour in other locations, except as provided in (e);

(e) 65 miles an hour on the interstate [and other highways like the turnpikes] .... where said highways are 4-lane divided highways or other divided highways of 4 or more lanes.”

While these speeds generally match what is a safe travel speed for vehicles in those environments, these speeds are faster than what pedestrians or bicyclists would generally feel comfortable next to. Stakeholders have reported difficulty in getting speed limits lowered from the values proscribed by the policy described above.

### 1.2.2 Changes to speed limits

NHDOT adheres to the current MUTCD policy in terms of setting speed limits. That policy sets speeds within 5 miles per hour of 85<sup>th</sup> percentile operating speeds as the primary guideline for setting speed limits. The MUTCD policy, however, describes other factors which may be considered when setting or evaluating speed limits, including:

- A. Road characteristics, shoulder condition, grade, alignment, and sight distance;
- B. The pace;



- C. Roadside development and environment;
- D. Parking practices and pedestrian activity; and
- E. Reported crash experience for at least a 12-month period.”<sup>2</sup>

**The 85<sup>th</sup> percentile speed guideline is effectively the standard in practice, and educating engineers department-wide about the potential for these other factors to influence the ultimate speed limit would be an important step the department can take to ensure speed limits are appropriate for all road users.** The MUTCD method of speed-limit setting is under review nationally to require explicit recognition of pedestrian and bicycle activity when establishing appropriate speeds. While this change will likely not be implemented until a new MUTCD is published a few years from now, this change will better allow NHDOT to set more-appropriate speed limits that are sensitive to nonmotorized users.

### 1.2.3 Reallocation of roadway space

One of the easiest and most cost-effective ways to improve infrastructure for walking and bicycling is through pavement restriping during resurfacing projects. NHDOT’s Bicycle and Pedestrian program publicizes upcoming resurfacing projects to provide opportunities for stakeholders to influence the planned striping early enough on in the process. By default, NHDOT will stripe 11- to 12-foot travel lanes. When local stakeholders and policies support alternatives, NHDOT Bureaus will consider narrower travel lanes—sometimes as narrow as 10 feet in width--freeing more space for pedestrians and bicyclists. Decisions regarding travel-lane width consider operating speeds, traffic volumes, truck traffic, and surrounding context.

**Two key improvements would support more consistently reallocating space to support bicycling and walking. First, while the NHDOT bicycle and pedestrian program reaches out to municipalities and posts upcoming resurfacing projects on its website, more proactive outreach to the community would help ensure a larger number of residents and not just those close to the process would be able to participate in the process. Second, instead of setting a standard travel lane width and only considering modifications based on local request, NHDOT could request local input on every project.**

### 1.2.4 Pedestrian crossing locations

New Hampshire DOT relies on MUTCD guidelines for unsignalized pedestrian crossings of state highways. These guidelines rely on research to determine suitable locations for pedestrian crossings. The key criteria include “the number of lanes, the presence of a median, the distance from adjacent signalized intersections, the pedestrian volumes and delays, the average daily traffic (ADT), the posted or statutory speed limit or 85th-percentile speed, the geometry of the location, the possible consolidation of multiple crossing points, the availability of street lighting, and other appropriate factors.”<sup>3</sup> Along with this criteria are specific guidelines for when crosswalks on their own are NOT suitable and additional supportive measures, such as flashing beacons or median islands, would be necessary. These locations have speed limits above 40 miles per hour, four travel lanes to cross, and

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<sup>2</sup> MUTCD, Page 58 (Section 2B.13 Speed Limit Sign (R2-1))

<sup>3</sup> MUTCD, Page 384 (Section 3B.18 Crosswalk Markings)



traffic volumes of at least 12,000 vehicles per day (with a median) or 15,000 vehicles per day (without a median). FHWA completed a report in 2005, *Safety Effects of Marked Versus Unmarked Crosswalks at Uncontrolled Locations*, which included specific recommendations for when a crosswalk could be installed, additional supportive features should be considered, or can only be installed with additional supportive. This information has informed supplemental policies adopted by a number of states. The key criteria are shown in Table 1 below (taken from Table 11 in the FHWA Report).<sup>4</sup>

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<sup>4</sup> FHWA, “Safety Effects of Marked Versus Unmarked Crosswalks at Uncontrolled Locations”, HRT-04-100, September 2005, page 54.

**Table 1:** Recommendations for installing marked crosswalks and other needed pedestrian improvements at uncontrolled locations (Table 11 in FHWA’s Safety Effects of Marked Versus Unmarked Crosswalks at Uncontrolled Locations)

ay Type (Number of Travel Lanes and Median Type)	Vehicle ADT			Vehicle ADT			Vehicle ADT			Vehicle ADT		
	≤ 9,000			>9,000 to 12,000			>12,000-15,000			> 15,000		
	Speed Limit**											
	≤ 48.3 km/h (30 mi/h)	56.4 km/h (35 mi/h)	64.4 km/h (40 mi/h)	≤ 48.3 km/h (30 mi/h)	56.4 km/h (35 mi/h)	64.4 km/h (40 mi/h)	≤ 48.3 km/h (30 mi/h)	56.4 km/h (35 mi/h)	64.4 km/h (40 mi/h)	≤ 48.3 km/h (30 mi/h)	56.4 km/h (35 mi/h)	64.4 km/h (40 mi/h)
Two lanes	C	C	P	C	C	P	C	C	N	C	P	N
Three lanes	C	C	P	C	P	P	P	P	N	P	N	N
Multilane (four or more lanes) with raised median***	C	C	P	C	P	N	P	P	N	N	N	N
Multilane (four or more lanes) without raised median	C	P	N	P	P	N	N	N	N	N	N	N

\* These guidelines include intersection and midblock locations with no traffic signals or stop signs on the approach to the crossing. They do not apply to school crossings. A two-way center turn lane is not considered a median. Crosswalks should not be installed at locations that could present an increased safety risk to pedestrians, such as where there is poor sight distance, complex or confusing designs, a substantial volume of heavy trucks, or other dangers, without first providing adequate design features and/or traffic control devices. Adding crosswalks alone will not make crossings safer, nor will they necessarily result in more vehicles stopping for pedestrians. Whether or not marked crosswalks are installed, it is important to consider other pedestrian facility enhancements (e.g., raised median, traffic signal, roadway narrowing, enhanced overhead lighting, traffic-calming measures, curb extensions), as needed, to improve the safety of the crossing. These are general recommendations; good engineering judgment should be used in individual cases for deciding where to install crosswalks.

\*\* Where the speed limit exceeds 64.4 km/h (40 mi/h), marked crosswalks alone should not be used at unsignalized locations.

\*\*\* The raised median or crossing island must be at least 1.2 m (4 ft) wide and 1.8 m (6 ft) long to serve adequately as a refuge area for pedestrians, in accordance with MUTCD and American Association of State Highway and Transportation Officials (AASHTO) guidelines.

**C = Candidate sites for marked crosswalks** . Marked crosswalks must be installed carefully and selectively. Before installing new marked crosswalks, an engineering study is needed to determine whether the location is suitable for a marked crosswalk. For

an engineering study, a site review may be sufficient at some locations, while a more in depth study of pedestrian volume, vehicle speed, sight distance, vehicle mix, and other factors may be needed at other sites. It is recommended that a minimum utilization of 20 pedestrian crossings per peak hour (or 15 or more elderly and/or child pedestrians) be confirmed at a location before placing a high priority on the installation of a marked crosswalk alone.

**P = Possible increase in pedestrian crash risk may occur if crosswalks are added without other pedestrian facility enhancements.** These locations should be closely monitored and enhanced with other pedestrian crossing improvements, if necessary, before adding a marked crosswalk.

**N = Marked crosswalks alone are insufficient, since pedestrian crash risk may be increased by providing marked crosswalks alone.** Consider using other treatments, such as traffic-calming treatments, traffic signals with pedestrian signals where warranted, or other substantial crossing improvement to improve crossing safety for pedestrians.

The Design Guidelines section of the NHDOT Statewide Pedestrian and Bicycle Transportation Plan includes examples of additional pedestrian crossing improvements and other facilities that are known to be effective safety treatments, per FHWA's Proven Safety Countermeasures document. Examples include:

- Pedestrian Crossing Island – 56% reduction in pedestrian crashes<sup>5</sup>
- Sidewalk along roadway – 65%-89% reduction in pedestrian crashes
- Paved shoulders – 71% reduction in pedestrian crashes
- Pedestrian Hybrid Beacons (aka HAWK signals) – 69% reduction in pedestrian crashes (along with a 29% reduction in total crashes)
- Pedestrian improvements at signalized intersections
  - Lead Pedestrian Interval – 60% reduction in pedestrian crashes
  - Countdown signals – up to 52% reduction in pedestrian crashes (per a large-scale study in the City of San Francisco)



*Pedestrian crossing island on North Main Street/Route 3 in Concord*

Typically, new crosswalks are designed, constructed, and maintained by municipalities, and NHDOT includes local input when making decisions about suitable locations for new crosswalks or places where crosswalks should be removed. The main concern is ensuring a crosswalk will have adequate use to justify its presence and to ensure drivers recognize the potential for actual pedestrian presence. NHDOT does not appear to have a definitive threshold for minimum pedestrian volume thresholds. A minimum

<sup>5</sup> The likely reduction in the number of crashes involving pedestrians helps make the case for investments in pedestrian safety countermeasures from a pure cost perspective. Although some counter measures can cost tens or hundreds of thousands of dollars, this much be contrasted with the macro- economic impact of pedestrian and bicycle-related crashes. According the U.S. DOT's Benefit-Cost Analysis Guidance for Discretionary Grant Programs (December 2018), the monetized cost of each fatality is \$9.6m, the cost of a severe injury is \$459,00 and a visible injury, \$63,900.

of 20 pedestrians during the peak hour is a suggested threshold in the FHWA guide (15 elderly pedestrians or children).

### 1.2.5 Sidewalk construction

NHDOT is often willing to include sidewalk construction as part of road improvement projects, but requires the municipality to be responsible for maintenance. Justifying owning and maintaining sidewalk plows and other similar resources, requires an extensive network of sidewalks. New Hampshire includes many small towns which are unlikely to have more than a few sections of sidewalk. The burden of maintaining these facilities is particularly challenging for those communities.

If and when a partnership with a local municipality is established, determining whether a new sidewalk should be established on one side of a state highway or both sides is an important consideration. The AASHTO Guide for the Planning, Design and operation of Pedestrian Facilities manual makes clear the desire for sidewalks on both sides of a roadway based on a variety of conditions (see footnote)<sup>6</sup>. In consideration to AASHTO guidance, a number of additional, context-sensitive elements should be carefully considered:

- Land use: does the roadway corridor include homes or commercial uses, and are they on one or both sides of the roadway? Does one side of the corridor remain in an undeveloped state?
- Residential Density: will the sidewalk(s) serve low-density, single family homes, or multi-family housing (the latter may require ADA accessibility)?
- Destinations: are there nearby destinations—especially schools—that might encourage pedestrians to cross the roadway twice for access if a sidewalk were only provided on one side? If this is the case, are there opportunity for unsignalized crossing locations in the area?
- Topography: do cross slopes and/or drainage swales create challenges for sidewalk construction on one side versus the other?



*Discrete portions of NH Route 202 in Chichester feature a sidewalk on both sides of the highway, occasionally separated from the roadway by a drainage swale*

<sup>6</sup> Page 57: "Sidewalks should connect to street systems and destinations in a safe and convenient manner. Where sidewalks are provided on only one side of a roadway, the overall connectivity of the sidewalk is weakened, as well as pedestrian safety and accessibility. Sidewalks provide on only one side of the street often require pedestrians to cross streets unnecessarily to meet their travel needs. As a result, the level of exposure of pedestrians to potential conflicts is increased. Therefore, sidewalks on only one side of the street are not generally recommended. However, a sidewalk on one side of the street may be appropriate where only that side of the street is developed. A sidewalk on one side of the street may also be adequate for some local streets on an interim basis, especially when this improves a condition where there were no sidewalks previously."

- Funding: with limited funding, is it best to place sidewalks on both sides of a highway for a short distance, or along one side for twice the length?
- Character: what is the level of impact on community character if sidewalks were built on both sides (especially, if there will be impact to mature street trees)?
- Shoulder(s): does the presence of a wide shoulder on one or both sides of a highway provide a potential pedestrian facility in lieu of a sidewalk on one or both sides?
- Deliverability: the following conditions will have an impact on the ability to provide a sidewalk on one or both sides of a highway:
  - Need for acquisition of right-of-way or permanent easements
  - Environmental challenges and the need for regulatory permitting on one or both sides
  - Local community support, especially residents and property owners along the corridor
  - Presence of physical obstacles
  - Current or future development permits that can be leveraged for sidewalk construction

Other state DOTs that must regularly manage snow and ice require local bodies to maintain sidewalks, despite available construction funding mechanisms. The State of Vermont typically funds sidewalk construction through federal funds passed through the Bicycle and Pedestrian Program.<sup>7</sup> These funds require 20% local match. Very small sidewalk projects might be built through the Small-Scale Projects category within the Bicycle and Pedestrian Program, which uses State funds and requires a 50% local match. Either type of project requires a local maintenance agreement. Sidewalks on State highways in Vermont are often proximate to schools or within village centers, and the schools or local municipality take responsibility for maintenance.

Utah has dedicated state funds from the legislature for sidewalk projects called the Safe Sidewalk Program.<sup>8</sup> These sidewalk projects require 25% local match and must be in an urban or built-up area with significant pedestrian activity. This program is also explicit that a local political subdivision must accept responsibility for maintenance. The Utah administrative code is also explicit that the Utah Department of Transportation will not maintain sidewalks (R918-3-4). Different local jurisdictions have ordinances that then pass this responsibility to the property owner. For example, Salt Lake County, Salt Lake City, and Spanish Fork are a few different local bodies in Utah that require property owners to maintain sidewalks<sup>9</sup>. Salt Lake City has fines starting at \$50 per day for snow that is not removed within 24 hours.

<sup>7</sup> <https://vtrans.vermont.gov/sites/aot/files/highway/documents/ltf/2019%20BikePed%20Program%20Guide.pdf>

<sup>8</sup> <https://www.udot.utah.gov/main/uconowner.gf?n=10467522336432843>

<sup>9</sup> <https://slco.org/operations/services/snow-ice-control/>; <https://www.slc.gov/buildingservices/civil-enforcement/enforcement/sidewalk-snow-removal/>; [https://www.spanishfork.org/departments/public\\_works/streets/street\\_snow\\_removal.php](https://www.spanishfork.org/departments/public_works/streets/street_snow_removal.php)

The State of Massachusetts also allows local municipalities to pass ordinances requiring property owners or occupants to remove snow and ice (MGL c. 85, § 5). An ordinance must stipulate time and manner of removal and include fines of not more than \$50 in cities or \$10 in towns “for each violation”.

### **1.2.6 Data to Plan for the Needs of Nonmotorized Users**

One challenge in meeting the needs of pedestrians and bicyclists is the availability of data to support planning efforts. While the following data would support planning for nonmotorized users, it would also be useful to develop and maintain a data collection program which includes:

- Regular speed studies to determine the prevailing traffic speed on state highways and numbered roadways throughout the state
  - Currently only posted speeds are available, which do not accurately reflect the safety or comfort of pedestrians or bicyclists
  - Speed information informs the space necessary to provide adequate separation and protection for nonmotorized users
- Accurate and thorough shoulder-width data
  - Currently, reliable shoulder width data is limited to Tier 1 and 2 roads which have limited to no bicycle or pedestrian use
  - Shoulder-width data is important to understand the availability of space for nonmotorized users
- Traffic volumes
  - While traffic counts are regularly conducted by NHDOT, they are only available on a small subset of roads
  - The volume of motor vehicles is another important factor in determining the comfort of nonmotorized users and the separation necessary
- Intersection lane configurations
  - Crash reviews in other states have indicated many bicyclist-involved crashes occur proximate to more complex intersection.
  - Having data on current lane geometries at major intersections helps plan for the needs of nonmotorized users to ensure they have the space and protection necessary given the roadway context

### 1.3 Summary of Potential Improvements to NHDOT Policies and Procedures

As mentioned through this section, NHDOT has a number of systems in place to support walking and bicycling in the New Hampshire. A handful of improvements to those systems have been suggested that ultimately will encourage more residents and visitors to walk or bicycle for commuting, recreation and/or daily errands. They include:

- Develop checklists related to pedestrian and bicycle facilities for project development
- Educate staff through NHDOT about the checklists and Departmental Goals for Walking and Bicycling
- Ensure RPCs include nonmotorized needs in their project evaluation criteria
- Track annual expenditures for walking and bicycling accommodations, including when they are components of larger projects
- Provide eligibility for pedestrian and bicycle facilities for ALL roadway funding sources, not just discrete grant programs such as CMAQ, HSIP and TAP
- Ensure all NHDOT bureaus are supportive of the statewide goals, including sweeping, plowing, striping, and speed limit setting
- Develop specific measurable criteria or thresholds for walking and bicycling accommodations
- Expand data collection efforts to reflect the needs of pedestrian and bicycle planning

#### Role of State DOT's in the Four "E's" Program Delivery

Generally, the role of State Departments of Transportation in delivering pedestrian and bicycle education and encouragement programs can be summarized as follows:

- Provide funding for active transportation (and frequently public transit) education and encouragement programming and infrastructure

#### Historic Village Overlay Zones

To help promote roadway-user safety in small towns and villages in New Hampshire, development of a Historic Village Overlay (HVO) zone is recommended. The goals for such a designation are to:

- Improve safety for pedestrians, bicyclists, motorists and equestrians;
- Encourage more pedestrian and bicycle trips locally;
- Enhance the historic character of the community, and;
- Promote economic development through improved landscaping and pedestrian facilities and amenities.

Through the HVO zone, communities could also leverage the designation to receive grant money, Foundation support and other funds to improve their historic character and streetscape.

Establishment of an HVO zone is intended to encourage partnerships between small municipalities and the state DOT, with an emphasis on providing context-sensitive roadway elements within state highways and unnumbered roads. This begins with renewed emphasis on lowering traffic speeds on the approaches into historic town and village centers. This can be achieved using narrower travel lanes (down to 10'-0"), gateway treatment that creates physical and/or visual pinch points, and other traffic-calming elements (see Design Guidelines section of this report, and/or the Town of Amherst's 2019 Bicycle/Pedestrian Master Plan, Chapter 2).



- Promote mode shift that results in increased safety and normalizes walking and bicycling
- Coordinate best practices throughout DOT bureaus, across DOT Maintenance Districts and across Regional Planning Commission districts
- Create standardized education and encouragement materials (e.g., social media content, PSAs, videos, and other materials) that can be modified to fit local communities
- Collect and analyze transportation safety, usage, and infrastructure data
- Coordinate with other State agencies and departments to accomplish goals related to transportation and public health

## 1.4 Evaluation of Existing Programs

Existing statewide pedestrian and bicycle education, encouragement, enforcement and evaluation programs and media campaigns were reviewed for New Hampshire Statewide Pedestrian and Bicycle Transportation Plan. Most originate from NHDOT, but other state agencies and non-profit organizations were included.

### 1.4.1 – Driver’s Manuals

- [State of New Hampshire Commercial Driver’s License \(CDL\) Guide](#)
- [State of New Hampshire Drivers Manual](#)

### 1.4.2 – Youth Focused Education

- [Safe Routes to School Program](#)

### 1.4.3 – Press Releases

- [Rumble Strips Being Installed for Highway Safety](#)
- [New Pedestrian Safety Signals Installed in Epping and Meredith](#)

### 1.4.4 – NHDOT Pedestrian and Bicycle Program

- [NHDOT Pedestrian and Bicycle Program web site](#)
  - [NHDOT Bicyclist and Motorist Safety Brochure](#)
  - [Pedestrian Safety Public Safety Announcement \(PSA\)](#)

### 1.4.5 – Department of Health and Human Services Information

- [Healthy Eating Active Living \(HEAL\) Active Transportation Resources](#)

### 1.4.1 Drivers Manuals

Educating motorists how to legally, safely, and considerately operate a vehicle around people walking and bicycling is an important part of any effort to reduce crashes and improve safety for all roadway users. This section reviews New Hampshire’s commercial and non-commercial drivers’ manuals for guidance regarding motorist interactions with pedestrians, bicyclists and other vulnerable users.

## Commercial Driver's Manual

The New Hampshire Commercial Driver License (CDL) Driver's Guide for discusses safe operating practices around bicyclists and pedestrians. Key points from the manual include:

- **When Passing:** Whenever drivers are about to pass a vehicle, pedestrian or bicyclist, assume they don't see you. Since they could suddenly move in front of you, the manual tells drivers to tap the horn lightly or, at night, flash your high beams to alert them to your presence. Additionally, drive carefully enough to avoid a crash even if they don't see or hear you.
- Another section titled "Seeing Hazards" describes other automobile drivers, bicyclists, and pedestrians as "hazards"
- Pedestrians and joggers may travel with their backs to oncoming traffic or may wear headphones or be using hats or umbrellas, causing them not to see you. All are considered hazards.
- **Driver body movement as a Clue:** Drivers look in the direction they are going to turn, and may make over-the-shoulder checks to change lanes. These clues are most noticeable in motorcyclists and bicyclists.
- The manual instructs drivers to take wide turns around corners "so the rear end does not run over the curb, pedestrians, etc."
- When coming to a stop, look for pedestrians, traffic or other objects before, during, and after coming to a stop
- At intersections, decelerate gently, and yield to and pedestrians and traffic in the intersection
- **Regular Traffic Checks:** Scan and check traffic in high volume areas and areas where pedestrians are expected to be present.

The commercial licensing exam should have more content related to the safety of operating around bicyclists and pedestrians. The licensing curricula and examinations have the power to increase commercial drivers' understanding of how to legally, safely, and considerately operate a vehicle around people walking and bicycling. The following recommendations should be considered:

### Commercial Driver's Manual and Education Recommendations

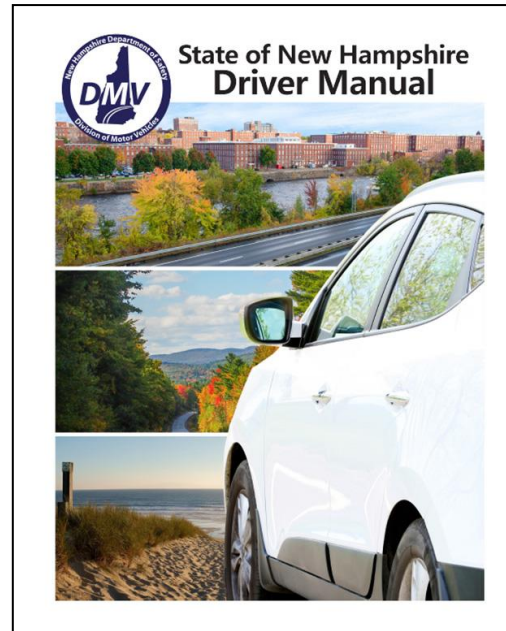
- Revise education materials to include information on driving near bicyclists riding in the roadway and detailed descriptions of bicycle infrastructure and pavement markings, include supporting diagrams
- Remove the recommendation that commercial drivers honk or flash lights when passing a person bicycling.
- Review licensing test questions for the presence of questions that specifically address rights and responsibilities of commercial drivers near people walking and bicycling.
- Outreach with commercial driver's education providers is necessary to inform educators and commercial driving companies about safety devices, such as truck guards, that could reduce the likelihood of fatal injuries resulting from a truck-bicycle crash.
- Include a module that focuses on commercial drivers as a target audience in any media campaign created by the DOT or other partners to discuss active transportation safety.

## Standard Driver's License Manual

The New Hampshire Standard Driver's License Manual includes some guidance for interactions with pedestrians or bicyclists, however it is also an important opportunity to teach new drivers how to operate safely alongside pedestrian and bicyclists. In general, the pertinent sections in the manual lack important pieces of information, show incorrect or biased information in some places, and should have more graphics to enable a better understanding of sharing the road and responsibilities with regards to who has the right of way. The manual should be updated with clearer and more up-to-date safety education regarding the sharing of roadways with bicyclists.

Key points from the manual include:

- When passing bicyclists, motor vehicle drivers shall "exercise due care by leaving a reasonable and prudent distance between the vehicle and the bicycle. The distance shall be presumed to be reasonable and prudent if it is at least 3 feet when the vehicle is traveling at 30 miles per hour or less"
- When meeting an oncoming bicyclist at night, always dim your lights
- Extra care is needed during the morning and afternoon when bicyclists are traveling between home and work, school or play
- As vehicle operators, bicyclists are small and lightweight and almost any type of collision will result in injury or death to the rider



Oddly, the remainder of the section is a list of rules that bicyclists must obey, followed by a list of equipment that bicyclists are required to have. These bulleted lists have nothing to do with obtaining a driver's license or operating a motor vehicle safely around a more vulnerable bicyclist, and belong in a Bicyclist Rules of the Road brochure or elsewhere.

The next section includes guidance for interactions with pedestrians. Key points from the manual include:

- Drivers must use extreme care to avoid colliding with a pedestrian, especially in school zones, near bus stops, playgrounds, and parks
- Pedestrians have the right of way when; they are in a crosswalk, they are using a sidewalk, crossing an alley entrance or driveway; they are totally or partially blind, and are crossing the street guided by a dog or carrying a cane white in color or white tipped with red

The remainder of the section is a list of rules that pedestrians must follow. There is also guidance on sharing the road with joggers and with visually impaired / blind pedestrians, including:

- When driving, be alert for joggers in unexpected places such as the top of a hill or in the middle of a curve

The document inappropriately states that “Many joggers are killed each year because they are careless.” Future revisions to the Drivers Manual should omit victim-blaming when referencing vulnerable road users. Additionally, recommendations to keep joggers safe, such as “if you must jog on public roads, choose wide roads with good shoulders” do not belong in a public document intended to educate motor vehicle operators how to safely operate around joggers.

The next section includes guidance on sharing the road with visually impaired or blind pedestrians. Key points from the section include:

- Observing the use of a white cane or harnessed guide dog as indicators of pedestrian blindness
- Motor vehicle law requires motor vehicle drivers to come to a complete stop whenever a person who is carrying a white cane or using a guide dog is attempting to cross a roadway
- Drivers should anticipate that blind pedestrians will listen to hear when it is safe to cross a roadway, and that this might not be at the same time that the driver would expect a sighted person to cross

The document inappropriately states “As tempting as it may be, it is not at all helpful to honk or yell at a person who is blind or visually impaired, ever!” For a public-facing document to suggest that this behavior is tempting is inappropriate and should be removed from future iterations of the Statewide Drivers Manual.

### **1.4.2 Youth Focused Education**

Youth-focused education in New Hampshire is typically composed of Safe Routes to School (SRTS) education and encouragement programming, which aims to increase the number of children who walk or ride bicycles to school. Local school districts and community organizations throughout the state also provide youth-focused education surrounding active transportation. Local initiatives were not reviewed for the purposes of this report, however.

#### **Safe Routes to Schools**

New Hampshire DOT encourages more communities to get involved in the Safe Routes to Schools (SRTS) program. The program was designed for students from K – 8<sup>th</sup> grades who live within two miles of a school. Originally, Federal funds reimbursed the state 100% for the cost of improving bicycle and pedestrian infrastructure (sidewalks and bike lanes) around public elementary and middle schools. Currently, infrastructure projects related to schools are eligible for only an 80% reimbursement under the Transportation Alternatives Program (TAP). Due to this, the number of SRTS projects in New Hampshire has dwindled in the past few years.

Non-infrastructure programs include the educational, encouragement, and enforcement programs to foster increased walking and bicycling to schools and to promote safe behavior. Some elements of encouragement include safety: escort programs, walking school buses, and rolling bike trains encourage students to meet at a designated location and walk or bike with a group of parents, teachers, or volunteers.

The Bike Walk Alliance of New Hampshire has partnered with NHDOT using SRTS funding and offers walking and bicycling safety instructions through the schools in all regions of the state. The program has helped to educate over 12,000 elementary school children in New Hampshire, to-date.

### 1.4.3 NHDOT Press Releases

New Hampshire DOT releases information about upcoming planned roadway safety upgrades that educate New Hampshire residents about roadway safety improvements. The Department's press releases center the conversation on motorists to reduce crashes, and occasionally focus on motorists' responsibilities towards people walking and bicycling. This helps frame the conversation in terms of how drivers should interact with pedestrians and bicyclists when passing, at intersections, and in other scenarios. Some example press releases include:

- **Rumble Strips Being Installed for Highway Safety** – This Press Release from June 2016 highlights the ongoing efforts by NHDOT to reduce crashes on non-divided highways by installing centerline rumble strips. While the press release cites national statistics related to *shoulder* rumble strips, no shoulder rumble strips are included in the project. Future safety-related press releases should include the safety benefits of those who walk, jog, or bicycle along shoulders of state highways as well.
- **New Pedestrian Safety Signals Installed in Epping and Meredith** – This press release from October 2014 highlights new traffic control signals being installed to improve pedestrian safety on busy roadways. The document gives information about how Pedestrian Hybrid Beacons (PHBs) look and operate. The press release also cites national statistics about the associated safety improvements that come with the installation of PHB's (also known as High-Intensity Activated Crosswalk, or HAWK signals.) The press release includes a link to a Wisconsin Department of Transportation-produced animation about how to use the new PHBs.

### 1.4.4 NHDOT Pedestrian + Bicycle Program

The NHDOT has a dedicated web page for the Department's Pedestrian and Bicycle Program. The website includes links to articles about designing streets for the safety of vulnerable road users, to videos of local bike commuters who explain why they choose to commute by bicycle, and to a white paper about the economic benefits of non-motorized transportation published by the FHWA and the Non-motorized Transportation Pilot Program (NTPP).

Additional links to the Pedestrian and Bicycle Traffic webpage show-case various bicycle infrastructure striping projects in towns and cities in the state, and explain what the new markings look like and what their significance to roadway users. There are also links to Bicycle / Motor Vehicle Safety and Rules Pamphlets aimed at both motorists and bicyclists, bicycle route maps, as well as a list of easy-to-read bulleted summaries of general laws. The Document Library features an extensive list of reports, information on pavement resurfacing projects, Active Transportation Field Reviews, trail design standards and agreement examples, and information on Complete Streets.

Under “News and Events”, there is a collection of up-to-date articles, reports and updates related to pedestrian and bicycle projects and issues throughout New Hampshire, and includes information about equestrian issues as well. Finally, there is a link under the Project Development > Planning and Community Assistance > TAP (Transportation Alternatives Program) webpage that highlights the most-recent round of TAP-approved projects that have received funding and will be constructed around the state.

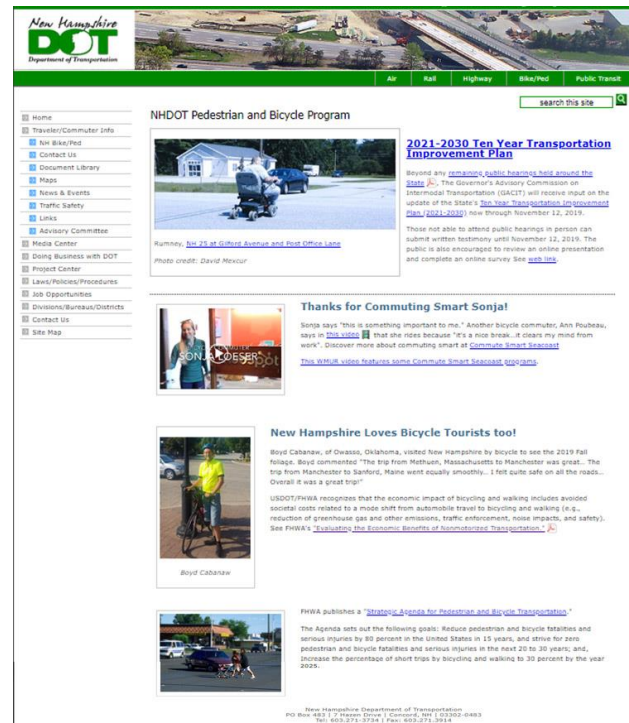
While the Department’s webpage is a great resource, its organization could be improved. Users looking for specific information have to either do a global search or click on the Bike/Ped tab to see a long alphabetical list or “site map” that requires reading many redundant lines before finding what you are looking for. Cleaner and more-user friendly sites from the State of Vermont or North Carolina can be viewed at <https://vtrans.vermont.gov/highway/local-projects/bike-ped> and <https://www.ncdot.gov/bikeped/walkbikenc/default.aspx>, respectively.

## NHDOT Bicyclist and Motorist Safety Brochures

**Bicycle Safety - What Every Bicyclist Must Know:** The bicycle safety brochure includes helpful references to laws related to bicycling that are intended to keep bicyclists safe. Many of the text summaries include the formal reference to the RSA law. Highlights include:

- **Bicycle are vehicles:** Bicycles have the same rights and duties as motor vehicles. Bicycles must stop at stop signs and red lights, yield to pedestrians, and ride with traffic.
- Bicyclists should take a left turn from the right most left turn lane when multiple left turn lanes are available.
- Bicyclists shall not operate on sidewalks or ride the wrong way on one-way streets

Overall, the brochure is helpful and could even include more information in future iterations with links or references to additional available resources.



NHDOT Pedestrian + Bicycle Program Web Page



**Sharing the Road - What Every Motorist Must Know:** The aim of the brochure is to make sure motorists know that they are responsible for generating safe operating conditions around bicyclists. Many of the text summaries include the formal reference to the RSA law. Highlights include:

- When approaching a bicyclist, drivers must ensure the safety and protection of the bicyclist and shall exercise due care by leaving a reasonable distance when passing
- Bicycles may use the full lane when preparing to make a left turn at an intersection or into a driveway
- Expect bicyclists to move away from the right side of the road when overtaking and passing another bicycle or any other vehicle traveling in the same direction, when proceeding straight in a place where right turns are permitted, when necessary to avoid hazardous conditions
- When turning left, yield to on-coming bicyclists or any other vehicle. Don't under estimate the speed of a bicyclist.
- Signal well in advance of turns (at least 100 feet) so that bicyclists and other vehicles know your intentions
- Every driver of a vehicle shall exercise due care to avoid colliding with any pedestrian or any person propelling a human-powered vehicle

The Sharing the Road brochure is well written and includes graphics of bicycle related signage, including Bikes May Use Full Lane, State Law 3 Feet Minimum To Pass Bicycles, and an image of a Shared Lane Marking (sharrow). There is a helpful blurb explaining how sharrows alert road users of the lateral location bicyclists are likely to occupy within the traveled way. The information in the Sharing the Road – What Every Motorist Must Know brochure is well written and includes far more information than what is presently available in the State of New Hampshire Driver's Manual. A similar version of the brochure should be embedded in the Driver's Manual in the future.

### **Pedestrian Safety Public Safety Announcement (PSA)**

The State secured \$16,000 of funding for a Pedestrian Safety PSA which was aired on New Hampshire radio stations between July 1 and July 19, 2019. The script was approved by the Pedestrian Safety subcommittee and a consultant is working with NHAB to administer the contract.

### **1.4.5 Department of Health and Human Services**

New Hampshire's Department of Health and Human Services has a webpage dedicated to Nutrition & Physical Activity where visitors to the site can learn about proper nutrition and recommended physical activity to stay healthy. Programs include obesity prevention and others that provide technical assistance to communities that implement Healthy Eating Active Living (HEAL) initiatives.

### **Healthy Eating Active Living (HEAL)**

The HEAL program has a dedicated website and includes a link titled Active Transportation that provides resources and tools to understand how to incorporate active transportation into daily routines. The Active Transportation component of HEAL was established in 2013 with the goal of making roads,



highways, and streets safer and friendlier for bicyclists, walkers, including people with disabilities, and public transit rides. The initiative is one of the is the key objectives of the 2015-2019 Healthy People Healthy Places (HHPH) Plan.

HEAL and its active transportation partners are focused on the following strategies:

#### **State-Level Advocacy and Education**

- By 2015, establish a coordinated multi sector state level bike-pedestrian advocacy network to advance state and community level complete streets policies
- By 2019, at least 15 cities/towns have adopted complete streets approaches to community planning
- By 2019, a statewide Complete Streets law is enacted

#### **Bicycle and Pedestrian Infrastructure Investments**

- By 2015, “communities of need” is established as a criterion for NH Dot Transportation Alternatives Program (TAP) funding
- By 2019, public support for active transportation investment has increased 30% from 2015 levels
- By 2019, increase by 10% the number of all New Hampshire public and private pedestrian and bicycle projects that are complete or underway

HEAL partners with the Bike-Walk Alliance of NH and Transport NH to lead a growing coalition of organizations with a common interest to advance Complete Streets policies at state and local levels. Since HEAL distributed more than \$120,000 in grant money to towns and cities to build pedestrian and bicycle infrastructure in 2014, 70 communities, or 30% of the state has directly benefitted through support or education.

In addition to the above, the HEAL website includes dozens of links to additional information including many resources for encouragement and education for active transportation and bicycle and pedestrian programs and safety.

## **1.5 Summary of Select State DOT Programs that Promote Walking and Bicycling**

Research was conducted of other State DOTs to understand the programs promoting active transportation safety education programs and campaigns. This information is both synthesized in the following table as well as in the Recommendations section in this report.

### **Massachusetts**

The Massachusetts Department of Transportation (MassDOT) is one of the leading state DOT's on Complete Streets and pedestrian and bicycle programs and project funding. Programs that have some potential to encourage walking and bicycling in New Hampshire are shown in the table below.

Program	Description	Audience	Format	Alterations for NH Context
<b>Registry of Motor Vehicles Driver's Manual / Exam</b>	The Registry of Motor Vehicle has added several new key guidelines to the Massachusetts Driver's Manual and exam	People obtaining a Massachusetts driver's license, young and novice drivers.	Official State of MA Driver's Manual and required exam	NHDOT should include robust guidelines and laws related to motorist interaction with bicycles and pedestrians in the official manual and exam
<b>Complete Streets Funding Workshops</b>	MassDOT runs Complete Streets funding workshops through the UMass Transportation Center Baystate Roads program	Municipal planning staff, DPW staff, consultants, advocates	Full-day trainings	NHDOT could include a more-robust series of trainings and workshops to encourage a broader understanding of Complete Streets planning and design issues and potential funding opportunities
<b>"Scan the Street for Wheels and Feet"</b>	This safety education campaign is aimed at raising awareness for the safety of motorists, pedestrians, and bicyclists who share the same streets. The initiative seeks to reduce the number of crashes involving pedestrians and bicyclists.	Drivers, Bicyclists, and Pedestrians who use Massachusetts roads	Public Safety Campaign uses print advertising on bike share stations, Big Belly trash receptacles, buses, and other locations	NHDOT could adopt a similar catchy slogan for a Public Safety campaign to remind all street users to consider their own safety and the safety of others when driving, walking, or bicycling
<b>Baystate Bike Week</b>	MassDOT supports Bike Month and Bike Week with funding for programs that encourage bicycling in the month of May	Bicyclists, the general public	Advertising, events in certain Cities and Towns, raffles and other give away's	NHDOT could support Bike Week and Bike Month festivities by providing some funding for local municipalities to sponsor contests and ask bike commuters to log miles to track progress
<b>Motor Vehicles Parked in Bicycle Lane Enforcement</b>	In 2017, Massachusetts passed a law prohibiting motor vehicle parking or standing in bicycle lanes	Drivers	Violators of the state law receive a \$50 fine	NHDOT could adopt a similar law prohibiting parking or standing in bicycle lanes

## Colorado

The Colorado Department of Transportation (CDOT) offers a wide selection of programs, some of which could be adapted for New Hampshire.

Program	Description	Audience	Format	Alterations for NH Context
<b>Bicycle Friendly Training</b>	CDOT provides staff with driver education related to safe driving near people walking and bicycling.	State employees who use a car for any trip are required to take the training	Training – 1 ½ hours	If conducted by NH state employees, the training promotes an understanding of the safety needs of people walking and bicycling.
<b>Bicycling Manual: A Guide to Safe Bicycling</b>	CDOT produces a manual that includes content about bicycle rules of the road, bicycle safety checks, bicycling with children, and opportunities to join large-scale bicycling events in the state. Between 20,000 to 30,000 manuals are distributed every year.	Schools, police department	Printed Material	The Manual is detailed, yet clearly worded and organized, and could be replicated at a smaller scale in New Hampshire.
<b>Statewide Bicycle Map</b>	CDOT produces a free bicycle map with suggested routes throughout the state and includes safety information.	General Public	Printed and Online – 40,000 copies are distributed annually	NHDOT's current bicycle maps of the state are more than ten years old and should be updated and oriented to both transportation and recreation purposes.
<b>Statewide Bicycle and Pedestrian Counts Program</b>	CDOT maintains a program to collect bicycle and pedestrian volumes over time. The agency completed a strategic plan in 2016 to evaluate the program.	Public agencies	Online toolkit, print/online reports	CDOT's focus on evaluating the initiative over time allows it to meet agencies' and other stakeholders' needs and should be considered by NHDOT.

## Minnesota

Minnesota's Department of Transportation (MnDOT) offers robust education and encouragement programming for active and public transportation. The DOT's work with the Minnesota Department of Public Health (MDH) is a good example of cross-agency collaboration. According to Amber Dallman, the state's Pedestrian and Bicycle Program Coordinator, MnDOT maintains a close relationship with the Bicycle Alliance of Minnesota, a statewide advocacy group. This relationship leverages both organizations' resources and helps support statewide education and encouragement programs. MnDOT is currently partnered with the University of Minnesota to study pedestrian safety education and enforcement programs' effectiveness; measuring both the impacts on driver and pedestrian behavior.

The Statewide Safe Routes to School Planning Assistance Program provides communities across the state with funding resources and technical assistance to plan and implement infrastructure and non-

infrastructure improvements around schools. The plans created through this initiative offer school districts support when applying for funding to improve active transportation facilities. Non-infrastructure solutions provided through the program include in-classroom educational programming, special events, and enforcement activities near schools. The planning process engages stakeholders through interactive planning charrettes. The planning team creates a prioritized list of strategies to improve safety near schools after analyzing existing conditions and data.

Program	Description	Audience	Format	Alterations for NH Context
<b>Minnesota Safe Routes to School</b>	MnDOT offers infrastructure and non-infrastructure focused SRTS programs to communities across the state. The State also promotes Winter Walk and Bike to School Day to demonstrate year-round encouragement opportunities.	Schools	Every year, MnDOT advertises trainings for schools who want to offer SRTS programming.	The state provides robust funding for SRTS activities.
<b>Walk!Bike!Fun!</b>	This safety curriculum compliments Safe Routes to School activities and was developed with the Bicycle Alliance of Minnesota. The program helps children ages five to 13 learn about traffic rules in public schools throughout the state.	Minnesota Public Schools	Curriculum	Walk!Bike!Fun! has reached over 40,000 students over three years. The curriculum is offered at no cost and supplemental materials are available. Something similar could be emulated as a partnership between NHDOT and the Bike-Walk Alliance of NH.
<b>Statewide Bicycle and Pedestrian Counts Program</b>	MnDOT developed and administers a statewide active transportation counting program, in partnership with the University of Minnesota. The program includes the installation of permanent counting equipment.	Public agencies, members of the public	Funding, reports and studies, resources for standardizing local manual count programs	The counting program has led to an increased understanding of active transportation patterns across the state. It is frequently cited as a model for other States and should be considered in NH.

### 1.5.1 Other Example Statewide Education and Encouragement Programs

The following education and encouragement programs represent examples of innovative and inspirational statewide initiatives to promote safe transportation by pedestrians and bicyclists.

#### Michigan: MDOT Safety Education Materials

MDOT offers several print and electronic resources for learning about safe walking and bicycling. These resources are offered from a variety of perspectives. For example, a brochure is available to teach

motorists about types of bicycle lanes such as buffered bike lanes, separated bike lanes, and green pavement markings. Information in the brochure informs motorists how to drive safely next to bike lanes and how to make a right turn across bike lanes. Road and trail maps are available to help bicyclists choose safe routes. Safety resources for pedestrians include brochures, fact sheets, and videos. Each MDOT district convenes a Michigan Regional Pedestrian and Bicycle Committee every quarter. These groups discuss education and encouragement programming, infrastructure planning, and transportation system evaluation. The committees are designed to help regional active transportation advocates and leaders learn about processes to improve walking and bicycling in Michigan.

### **North Carolina: Let's Go NC – Bicycle and Pedestrian Curriculum**

Let's Go NC is a bicycle and pedestrian safety skills program for children in North Carolina. The bicycle component of the curriculum is based on the 1990s Basics of Bicycling Curriculum, developed for fourth and fifth graders. The pedestrian component is based on the NTSHA pedestrian curriculum. Both components are modified for North Carolina and for use to instruct children in grades K-5. The safety skills program encourages children to be healthy and active by teaching the skills necessary for safely participating in bicycling and walking activities. The curriculum is available online and includes Safe Routes to School components, classroom curriculum materials, and videos and exercises within a very user friendly web site. Let's Go NC is based on an earlier NCDOT education program called "The Basics of Bicycling."

### **North Carolina: NCDOT Bicycle Helmet Initiative**

Since its inception in 1974, NCDOT's Division of Bicycle and Pedestrian Transportation (DPBT) has been committed to encouraging the use of bicycle helmets as an essential means of reducing bicyclist injuries and fatalities. Over the last twenty years, the DBPT has undertaken a series of helmet promotions in collaboration with other organizations and agencies across North Carolina. The Bicycle Helmet Initiative is designed to reduce bicycle related injuries and fatalities of children, as well as encourage behaviors that will lead to bicycle helmet usage as an adult.

Today, communities conducting bicycle safety events for underprivileged children can request helmets through the DBPT's Bicycle Helmet Initiative. The initiative is funded through proceeds from "Share the Road" license plates. While the DBPT does not actively promote the initiative, most agencies and schools are aware of the initiative and regularly request helmets. A maximum of 24 helmets is available per year to each agency that requests helmets, predicated on a "first come first serve" basis.

### **Vermont: Active Transportation Police Education**

The Vermont Agency of Transportation (VTrans) worked with a consultant team and a statewide advocacy organization to create training materials for new recruits joining the Vermont State Police. Training materials were broken into modules covering various topics related to law enforcement officers' role in protecting the rights and responsibilities of vulnerable roadway users. The in-person training was supplemented with printed materials covering the training's main topics focused around pedestrian and bicycle safety and enforcement.

## 1.6 Recommended Safety and Four “E’s” (Education, Encouragement, Enforcement and Evaluation) Programs

### Identification of Targeted Safety Behaviors

The suggestions below were selected to improve safety for people who walk and bicycle in New Hampshire and to encourage more state residents to choose active transportation for commuting, errands and recreational trips. Recommendations included here discuss the potential to create new safety education, encouragement, evaluation, and enforcement programs as well as enhancement to existing programming. These ideas were developed based on a review of existing NHDOT safety education materials and best practices research.

### Targeted Safety Behaviors List Development

Identifying a priority list of targeted safety behaviors helps focus proposed program recommendations on the most important issues. One of the objectives of safety education programming is to reduce the likelihood that pedestrians and bicyclists are involved in crashes, particularly those that cause serious or fatal injuries.

The list below proposes recommended targeted safety behaviors to address through the four E’s programs, especially education and encouragement:

- **Reduce distracted driving:** Crash reporting protocols make it difficult to discern how often distraction is a crash contributing factor. Nonetheless, citizens and decision makers share concerns about the need to reduce distracted driving, particularly involving mobile devices and other electronics.
- **Encourage youth/young adult and senior transportation safety:** Crash data nationally show that drivers under 35 and over 56 are more frequently involved in crashes.
- **Educate drivers about active transportation safety:** Motor vehicle speed typically plays a role as a contributing factor in crashes and influencing crash severity.
- **Encourage context-sensitive safety education programming for urban and rural contexts:** There is a need for program customization based on whether a target audience is located in an urban or a rural area.
- **Encourage increased rates of active transportation:** National data show that increased rates of active transportation result in decreased crash rates involving people walking and bicycling (called the “Safety in Numbers” principle).

#### 1.6.1 Ongoing Statewide Media Campaign

An ongoing statewide media campaign uses a variety of formats to convey safety messaging to people driving, walking, and bicycling. NHDOT and the CSAC’s work in this area has been a great start and taking it to the next level would be especially beneficial for safety. A media campaign could unite the various pieces of content that NHDOT has developed over time, including fact sheets and press releases. Possible media to share safety messages include social media ads and posts, outdoor advertising, websites, online ads, and posters distributed to partners and local communities. Potential target audiences and specific behaviors include:

- **Motorists:** Campaigns to changing unsafe behavior and recognizing the rights of other roadway users. Other specific behaviors include distracted driving and impaired driving.
- **Pedestrians:** Campaigns to remind motorists to look for pedestrians, especially children and the elderly. Campaigns should remind pedestrians to follow the rules of the road.
- **Bicyclists:** Campaigns to promote and normalize bicycling and remind bicyclists about the rules of the road.

Example campaigns from outside of New Hampshire include:

- **North Carolina “Watch for Me” campaign:** NCDOT’s campaign involved educational safety messaging for people driving, bicycling, and walking as well as related enforcement efforts by local police.<sup>10</sup>
- **Massachusetts “Scan the Street for Wheels and Feet” campaign:** MassDOT’s effective 2017-2018 campaign is described in the Massachusetts table in section 1.5 above.
- **“THINK!” road safety campaign from the UK Department for Transport:** This ad campaign includes customized material for urban and rural areas. The umbrella campaign houses ads that are targeted to specific safety problem behaviors and to specific audiences.

### 1.6.2 Safety Training Resources for State of NH Staff

As mentioned earlier, NHDOT staff play a crucial role in delivering effective safety programming to residents. Providing staff with robust, ongoing training will help accomplish this goal. Staff training can take a variety of shapes including, but not limited to, the options shown below.

#### Staff Training Opportunities

##### Connecting Health with the Built Environment Training

National research supports the connections between socioeconomic disparities in health outcomes and the impacts of the built environment, including transportation. These connections are complex and findings continue to emerge. Training State staff in public health, transportation, and related fields would enable education and encouragement planning to support positive health outcomes.

##### Driver Education for State Employees

Customized driver education is recommended for any state employee who drives for their position. Programming should focus on safe and legal interactions with people walking and bicycling. The Colorado Department of Transportation, for example, requires this type of training for their employees.

##### Law Enforcement Officer Training

Law enforcement officers participate in ongoing professional education to keep up on changing laws. Many states have created such professional development opportunities related to bicycling and walking safety, crash data, and laws. Modules should refresh officers’ understanding of common crash contributing factors, the role of law enforcement officials in keeping roadway users safe, and State law related to active transportation and driving. Vermont Agency of Transportation offers training for new

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<sup>10</sup> <http://www.watchformenc.org/>



recruits to the Vermont State Police Academy. Minnesota, Louisiana, North Carolina, and New York also offer law enforcement officer training.

### Implementation Details for Training Opportunities

<b>Promotional Methods</b>	<ul style="list-style-type: none"> <li>Email updates to NHDOT staff regarding upcoming trainings</li> <li>Press release to District staff</li> <li>Direct communication with partners such as the State Highway Patrol</li> </ul>
<b>Action Items</b>	<ul style="list-style-type: none"> <li>Evaluate training needs</li> <li>Evaluate the effectiveness of trainings held</li> </ul>
<b>Partner Agencies</b>	<ul style="list-style-type: none"> <li>NH Department of Health</li> <li>NH State Police</li> </ul>

### 1.6.3 Safe Routes for Seniors Program

A Safe Routes for Seniors education and encouragement grant program could be administered by NHDOT in a similar fashion to the existing Safe Routes to School grants. The Department would provide support to selected communities by working with local agencies and organizations. Together, the selected communities and the DOT would provide technical assistance for improving pedestrian safety for seniors, especially those in high crash areas. The program's resulting recommendations would include infrastructure development next steps and supportive education programming to encourage seniors' improved mobility. Given NHDOT's statewide focus, specific details would remain the responsibility of local jurisdictions, while DOT would provide consistency and program oversight.

#### Implementation Details for a Safe Routes for Seniors Program

<b>Promotional Methods</b>	<ul style="list-style-type: none"> <li>Create a statewide call for participation for interested communities</li> <li>Organize resulting materials on the NHDOT website (i.e., community maps, planning documents, safety brochures)</li> </ul>
<b>Action Items</b>	<ul style="list-style-type: none"> <li>Create a program scope similar to the State's existing Safe Routes to School framework, including recommendations presented in this memorandum.</li> </ul>
<b>Partner Agencies</b>	<ul style="list-style-type: none"> <li>NH Department of Human Services</li> <li>NH Department of Health</li> </ul>

#### 1.6.4 Promote Participation in the National Bike Challenge

The National Bike Challenge is a nationwide competition for individuals and organizations with the intent of encouraging more people to try commuting by bicycle.<sup>11</sup> The challenge occurs during May, which is considered National Bike Month. NHDOT can use the National Bike Challenge as New Hampshire's statewide bike commuting challenge in recognition of Bike Month. Using the system would avoid creating a duplicative program. NHDOT can work with the Office of the Governor to further promote the program and could sponsor prizes and/or recognition of the highest-ranking teams in the state (for public agencies, private-sector companies and local businesses).

##### Implementation Details for Participation in the National Bike Challenge

<b>Promotional Methods</b>	<ul style="list-style-type: none"> <li>• Use social media posts and a press release to publicize the program.</li> <li>• Work with large employers and New Hampshire cities to promote employee participation.</li> </ul>
<b>Action Items</b>	<ul style="list-style-type: none"> <li>• Plan publicity materials to promote the 2019 National Bike Challenge.</li> </ul>
<b>Partner Agencies</b>	<ul style="list-style-type: none"> <li>• Office of the Governor</li> <li>• Large employers</li> </ul>

#### 1.6.5 Create a Statewide Ped/Bike Counts Program

A statewide pedestrian and bicycle count program would enable NHDOT to monitor changes in active transportation usage over time. State DOTs across the country develop data collection frameworks to help Districts, counties, and local jurisdictions collect, analyze, and manage data. These functions are similar to DOTs' interest in maintaining accurate and precise motor vehicle counts. Sub-state agencies would be responsible for choosing to collect data manually (with volunteers) or using automated equipment. Among other uses, the resulting data would provide additional context for interpreting pedestrian and bicycle crash data. Having access to robust data is important for several reasons. Data makes it possible to assess changes over time, draw conclusions about the impact of new facilities, and improve the design of future facilities. Additionally, data helps to quantify the benefits of walking and bicycling, which ultimately makes active transportation projects more competitive for funding.

##### Implementation Details for Participation in the Statewide Counts Program

<b>Promotional Methods</b>	<ul style="list-style-type: none"> <li>• Direct communication with NHDOT District leaders, regional, and local decision makers</li> </ul>
<b>Action Items</b>	<ul style="list-style-type: none"> <li>• Assess existing count programs throughout the state.</li> <li>• Work with NHDOT Districts to develop a vision for the unified count program's next steps.</li> </ul>
<b>Partner Agencies</b>	<ul style="list-style-type: none"> <li>• NHDOT District Managers</li> <li>• Regional Planning Commissions</li> </ul>

<sup>11</sup> [Nationalbikechallenge.com](http://Nationalbikechallenge.com)

## 1.6.6 Enhance Tourism Resources

### Bike Guide and Online Resources

Enhancing VisitNH.com and other online/print resources with more-robust information about bicycle tourism could increase the number of bicycle tourists throughout the state. Example materials might include recommended routes, locally-owned businesses to visit or use for lodging, equipment and clothing tips, and more. New Hampshire could produce an annual or semiannual bike guide. Safety information should be prominently included throughout online and print materials. The safety information should be customized to rural and urban areas.

### Statewide Bicycle Route Maps

Incorporating the network recommendations from this plan, statewide bicycle route maps should be updated to promote awareness of existing bicycle-friendly routes and destinations across the state. Maps should also include safety tips to help riders learn about lane positioning, hand signals, pavement marking/traffic device meanings, and other rules of the road. The statewide bike route maps would be different and distinct from the planned state bike network in development for the New Hampshire Pedestrian + Bicycle Transportation Plan, since the latter network represents planned future routes suitable for bicycling. Colorado Department of Transportation (CDOT) and Minnesota Department of Transportation (MnDOT), and other agencies produce similar materials to help residents and visitors select routes that best suit their interests and fitness ability. NHDOT may choose to continue to distribute the maps electronically or as printed maps and could be available at rest stops, NH visitor centers, local libraries, city/town halls and other locations.

### Implementation Details for Participation in the Enhancing Tourism Resources

<b>Promotional Methods</b>	<ul style="list-style-type: none"> <li>VisitNH.gov is a comprehensive resource for tourism in New Hampshire. NHDOT can work to provide safety information (i.e., text, graphics, and links to other resources)</li> </ul>
<b>Action Items</b>	<ul style="list-style-type: none"> <li>Work with the Department of Health &amp; Human Services to update online and print materials.</li> <li>Review existing and proposed material to ensure content includes safety information about riding in rural areas.</li> </ul>
<b>Partner Agencies</b>	<ul style="list-style-type: none"> <li>Department of Health &amp; Human Services</li> </ul>

## 1.6.7 Vision Zero

We recommend including safety resources related to active transportation within the existing statewide Driving Towards Zero campaign. Providing adequate funding resources to implement education campaigns and other features could increase the reach of the overall initiative. The Driving Toward Zero initiative's current framework offers opportunities to add active transportation safety information to current programs. We recommend that materials include safety tips to remind motorists to look for people bicycling and walking and remind all roadway users about all modes' rules and responsibilities.

NHDOT can consider joining the Road to Zero Coalition, organized through the National Safety Council (NSC). The initiative was launched in 2016 by NSC, Federal Motor Carrier Safety Administration, and National Highway Traffic Safety Administration. The organization's goal is to eliminate roadway deaths by 2050.<sup>12</sup> Coalition members, including many state DOTs, receive access to toolkits, webinars, posters, and other resources to promote throughout their agency or organization. Members can compare safety and health data with other members and can apply for grants administered by NSC.

### 1.6.8 Summary Tables

The tables below include a summary of many of the recommended programs to improve pedestrian and bicycle safety and encourage more walking and bicycling in New Hampshire.

#### Evaluation

Policy or Program	Need for Revision	Recommendation	Agency Lead
<b>Bicycle and Pedestrian Counts</b>	Bicycle and pedestrian counts in the state are irregular and too few in number	Continue and expand upon existing counts program. Include both peak hour and 24-hour counts. Incorporate additional count locations in both urban, suburban, and rural locations, as well as areas with fluctuating incomes.	NHDOT, Regional Planning Commissions
<b>Bicycle and Pedestrian Crashes</b>	Data related to crashes involving bicyclist do not include the likely cause of the crash	Develop a new input on crash reports that provides the opportunity for local or State police to record the cause (e.g., hit from behind, right/left hook, dooring, etc.)	NHDOT, State Police, local Police departments

<sup>12</sup> <http://www.nsc.org/learn/NSC-Initiatives/Pages/Road-to-Zero-Grants.aspx>

## Education & Encouragement

Policy or Program	Need for Revision	Recommendation	Agency Lead
<b>Public Safety Campaign</b>	Current public safety campaigns focus on distracted driving, impaired driving, and speeding	Expand to include vulnerable road user safety campaign	NHDOT
<b>NH Tourism Website</b>	Provide a link to the bicycling page ( <a href="https://www.visitnh.gov/things-to-do/recreation/biking">https://www.visitnh.gov/things-to-do/recreation/biking</a> ) on the NHDOT website	Cross-promote bicycling as both a transportation option and a recreational pursuit	NHDOT
<b>US Bicycle Route System (East Coast Greenway)</b>	There is currently no link on the NHDOT website to the existing USBRS web page that includes the location of the East Coast Greenway in NH	Include a link on the NHDOT webpage to the USBRS webpage for the NH portion of the East Coast Greenway	NHDOT
<b>Bicycle Network Branding</b>	Lack of consistent signage and branding along many of the State's bikeways and shared-use paths	Create a cohesive signage and branding strategy for the State's key bicycle routes (collaborate with East Coast Greenway to install proper signage along ECG coastal route)	NHDOT
<b>Messaging from the Governor's Office</b>	The current Governor is a strong supporter of bicycle programs and infrastructure and could help provide added visibility to bicycling	Develop an annual announcement from the Office of the Governor during May (bike month) documenting progress in making NH a more bike-friendly state	Office of the Governor
<b>Extend MBTA Commuter Rail Train Service to Manchester</b>			MBTA
<b>Pop-Up Project Materials Lending Libraries</b>	Local agencies don't necessarily have the proper materials on hand to set up temporary pop-up projects; such projects effectively communicate the benefits of proposed street design changes	Create "lending libraries" of pop-up materials (flex posts, traffic cones, signs, etc.) to be used by public agencies to demonstrate bike lanes, pedestrian refuge islands, etc. Materials should be stored at each of NHDOT's maintenance facilities to make them readily available to municipal departments and Regional Planning Commissions around the state.	NHDOT

